REMARKS

The Final Office Action mailed October 23, 2003, has been received and reviewed. Claims 9 through 18, 20 through 23, and 42 through 45 are currently pending in the application. Claims 42 through 45 have been withdrawn from consideration as being drawn to a non-elected invention. Claims 9 through 18 and 20 through 23 stand rejected. Applicant has amended claims 9, 10, 12, 14, 18, 20 and 21, and respectfully requests reconsideration of the application as proposed to be amended herein.

Objection to Amendment filed July 22, 2003

The Amendment filed July 22, 2003 has been objected to under 35 U.S.C. 132 in that "it introduces new matter into the disclosure." Specifically, the Office has objected to the term "substantially planar" that is used to describe a substrate surface. Applicant has previously indicated that such substrate surfaces are clearly depicted in original FIGS. 4, 5, and 15. However, it is the Office's position that a surface with openings in it cannot be considered substantially planar. While Applicant respectfully disagrees with this line of reasoning, Applicant has removed the term "substantially planar" from the specification as being unnecessary to the patentability of the present invention and in order to advance prosecution on the merits.

35 U.S.C. § 112 Claim Rejections

Claims 9 through 18 and 20 through 23 stand rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 9 through 18 and 20 through 23 also stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Applicant respectfully traverses this rejection, as hereinafter set forth.

The Office has indicated that the specification does not provide support for the limitations that the substrate is "substantially planar." For the same reasons as discussed above with respect

to the objection for new matter, Applicant respectfully submits that such substrate surfaces are clearly depicted in original FIGS. 4, 5, and 15, and that claims 9 through 18 and 20 through 23 comply with the requirements of 35 U.S.C. § 112, first and second paragraphs. Nevertheless, Applicant has amended the claims to remove the term "substantially planar" and requests the rejections under 35 U.S.C. § 112, first and second paragraphs, be withdrawn.

35 U.S.C. § 102(e) Anticipation Rejections/35 U.S.C. § 103(a) Obviousness Rejections

Anticipation/Obviousness Rejection Based on U.S. Patent No. 6,229,320 to Haseyama et al.

Claims 9, 11, 12, 14 through 16, 18, and 20 through 22 stand rejected under 35 U.S.C. § 102(e) as being anticipated by, or in the alternative, under 35 U.S.C. § 103(a) as obvious over Haseyama et al. (U.S. Patent No. 6,229,320). Applicant respectfully traverses this rejection, as hereinafter set forth.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

M.P.E.P. 706.02(j) sets forth the standard for a Section 103(a) rejection:

> To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Haseyama et al. is directed to IC socket embodiments 200, 20-20D for mounting on a test board 32. The IC sockets have contact units 23-23B including a plurality of contact pins 30 for engaging solder bumps 28 on an IC device 25. In the different embodiments of Haseyama et al., contact units 23-23B may include various features such as elastic member 31, 31A, positioning

plate 36 with recesses 38, positioning parts 52A, 53A or guide plates 41 and 42 for retaining contact pins 30 and positioning of solder bumps 28 (Figs. 7-19). Haseyama et al. further discloses that contact pins 30 may have a spiral part 63 for contacting solder bumps 28 (Figs. 21A-21B and col. 15, lines 31-53). The opposite ends of contact pins 30 pass out of the underside of the socket body 21 and are configured to connect to land parts 33 on test board 32, or in the alternative, to have elastically deformable parts 71, 72, 73 inserted into through holes 70 in test board 32.

Applicant respectfully submits that Haseyama et al. fails to describe, teach or suggest all of the claim limitations of claims 9, 11, 12, 14 through 16, 18, and 20 through 22 as required under either 35 U.S.C. § 102(e) or 35 U.S.C. § 103(a).

Initially, claim 9 has been amended to recite the limitation of "a one-piece substrate bounded by a first surface and an opposing, second surface and having at least one conductive trace, *wherein said first surface is configured for mounting a plurality of IC devices thereto.*" (Emphasis added.) Applicant submits that support for this amendment can be found at ¶¶'s [0002], [0006], [0009], and [0065] of the as-filed specification. In the present rejection, the Office indicates that Haseyama et al. discloses a substrate comprising various structural elements of an IC socket 20B mounted on test board 32. Specifically, the Office indicates the substrate comprises the combination of elastic member 31, 31A and guide plates 41 and 42, which is described by Haseyama et al. as contact unit 23B. (Haseyama et al., Figs. 15 and 16.) Contact member 23B, including elastic member 31, 31A and guide plates 41 and 42, comprises an internal element of IC socket 20B, which is configured to receive a single IC device 25. As such, no surface of contact member 23B is configured for mounting a plurality of IC devices thereto.

Claim 9 also recites the limitation of an aperture having a seat portion "opening onto said first surface of said one-piece substrate." In the present rejection, the Office analogizes positioning holes 43 and 44 of guide plates 41 and 42 to the aperture recited in claim 9, and describes bump positioning part 53A as being a seat portion opening onto the substrate defined by elastic member 31, 31A and guide plates 41 and 42. Haseyama et al., however, describes bump positioning part 53A as being integral to elastic member 31 in an IC socket embodiment that does not include guide plates 41 and 42. (Haseyama et al., Fig. 14B.) As such, bump

positioning part 53A cannot be a seat portion of positioning holes 43 and 44 of guide plates 41 and 42.

Moreover, claim 9 now recites that the seat portion is "sized and configured to at least partially contain said contact portion of said spring contact and support the coils of the coil spring during compression thereof" and that the contact portion of the spring contact is "a resiliently compressible coil spring comprising a plurality of coils." While Haseyama et al. describes a contact pin 30 with a spiral part 63 that may comprise a coil spring, spiral part 63 does not comprise a plurality of coils and there is no indication anywhere in Haseyama et al. that spiral part 63 is contained within or supported by a seat portion of an aperture as recited in claim 9.

Claim 9 further recites that the aperture has a retaining portion "having a first end connected to an opposing end of said seat portion and a second end of a smaller lateral extent than the seat portion extending a depth at least partially into said one-piece substrate" and "configured to receive and electrically connect said base portion of said spring contact to said at least one conductive trace." In the present rejection, the Office analogizes deformable parts 71, 72, 73 of contact pins 30 to the spring contact base portion recited in claim 9, and indicates that positioning hole 44 of guide plate 42 with through-hole electrodes 46 is configured to receive and electrically contact deformable parts 71, 72, 73. Haseyama et al., however, describes that deformable parts 71, 72, 73 are inserted into through holes 70 in test board 32, and not into positioning hole 44 of guide plate 42. (Haseyama et al., Figs. 24A-24C and col. 17 lines 1-33.)

In view of the foregoing, it is clear that the Office has merely pieced together unrelated features of the IC socket embodiments described in Haseyama et al. in an attempt to show the elements required by the claims. The Federal Circuit has repeatedly cautioned against employing hindsight by using the applicant's disclosure as a blueprint to reconstruct the claimed invention out of isolated teaching of the prior art. *See, e.g., Grain Processing Corp. v. American-Maize Prods. Co.*, 5 U.S.P.Q.2d 1788, 1792 (Fed. Cir. 1988).

Accordingly, Applicant respectfully submits that Haseyama et al. fails to describe, teach or suggest all of the claim limitations of claims 9, and that claim 9 is allowable under the provisions of both 35 U.S.C. § 102(e) and 35 U.S.C. § 103(a). Claims 11, 12, 14 through 16, 18,

and 20 through 22, which depend from and incorporate all of the limitations of claim 9, are also allowable.

Anticipation/Obviousness Rejection Based on U.S. Patent Application Publication No. US 2002/0060579 A1 to Haseyama et al.

Claims 9, 10, 13, and 15 through 17 stand rejected under 35 U.S.C. § 102(e) as being anticipated by, or in the alternative, under 35 U.S.C. § 103(a) as obvious over Haseyama et al. (U.S. Patent Application Publication No. US 2002/0060579 A1). Applicant respectfully traverses this rejection, as hereinafter set forth.

The Haseyama application is directed to an electrical connecting device 18 for electrical connection to an IC package. The connecting device 18 includes contactors 10, a guide plate 20, screws 22, screw stoppers 23, and a substrate 24 (Figs. 5A and 5B and ¶ [0037]). Contactors 10 comprise an elongated conductive member 11 provided within a coil-shape spring 12 (Figs. 3A-4F). External electrodes 31, 61 of an IC package 30, 60 interface with contactors 10 on one side of guide plate 20, and land patterns 25 on substrate 24 interface with contactors 10 on the opposite side of guide plate 20. Wiring 26 provides a connection between land patterns 25 to test equipment 49 (Figs. 5B, 6-8, and 10).

Applicant respectfully submits that the Haseyama application fails to describe, teach or suggest all of the claim limitations of claims 9, 11, 12, 14 through 16, 18, and 20 through 22 as required under either 35 U.S.C. § 102(e) or 35 U.S.C. § 103(a).

Claim 9 has been amended to recite the limitation of "a one-piece substrate bounded by a first surface and an opposing, second surface and having at least one conductive trace, *wherein said first surface is configured for mounting a plurality of IC devices thereto.*" (Emphasis added.) Applicant submits that support for this amendment can be found at ¶¶'s [0002], [0006], [0009], and [0065] of the as-filed specification. In the present rejection, the Office indicates that the Haseyama application discloses a substrate comprising various structural elements of socket type connecting device 18. Specifically, the Office indicates the substrate comprises the combination of guide plate 20 and substrate 24. As illustrated and described in the Haseyama application, however, guide plate 20 is illustrated and described as being configured to receive a

single IC package 30, 60 (Figs. 5A, 12, and 13A-13C). As such, no surface of guide plate 20 is configured for mounting a plurality of IC devices thereto.

Claim 9, as amended, further recites a spring contact having a base portion "extending generally longitudinal from said contact portion and transversely to the coils of the coil spring." Coil-shape springs 12 of the Haseyama application, on the other hand, are illustrated as having a coiled configuration along their entire length and do not have a base portion as recited in claim 9.

Moreover, claim 9 now recites an aperture with a retaining portion "having a first end connected to an opposing end of said seat portion and a second end *of a smaller lateral extent than the seat portion* extending a depth at least partially into said one-piece substrate." (Emphasis added.) In the Haseyama application, apertures 21 are illustrated and described as having either a uniform cylindrical shape or a narrowed structure with inwardly tapered upper and lower portions (Figs. 5A and 5B and ¶ [0038]). As such, apertures 21 do not include a retaining portion having a first end connected to an opposing end of said seat portion and a second end of a smaller lateral extent than the seat portion extending a depth at least partially into said one-piece substrate.

Accordingly, Applicant respectfully submits that the Haseyama application fails to describe, teach or suggest all of the claim limitations of claims 9, and that claim 9 is allowable under the provisions of both 35 U.S.C. § 102(e) and 35 U.S.C. § 103(a). Claims 10, 13, and 15 through 17, which depend from and incorporate all of the limitations of claim 9, are also allowable.

Furthermore, claim 15, as well as claims 16 and 17 depending therefrom, recite the additional limitation of "a volume of conductive filler material disposed in and filling at least a partial depth of said aperture." In the present rejection, the Office asserts that land pattern 25 is analogous to a volume of conductive filler as recited in the claims. (Haseyama application, Fig. 5B). As clearly illustrated in the Haseyama application, however, land pattern 25 is not disposed in and does not fill any of aperture 21. Accordingly, claims 15 through 17 are allowable for that reason as well.

35 U.S.C. § 103(a) Obviousness Rejections

Obviousness Rejection Based on U.S. Patent No. 6,229,320 to Haseyama et al. in View of U.S. Patent Application Publication No. US 2002/0075025 A1 to Tanaka.

Claims 13 and 17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Haseyama et al. (U.S. Patent No. 6,229,320) in view of Tanaka (U.S. Patent Application Publication No. US 2002/0075025 A1). Applicant respectfully traverses this rejection, as hereinafter set forth.

Tanaka teaches a semiconductor testing tool having a socket casing 2 with internal lead wires 8 (Figs. 1 and 3). The internal lead wires 8 are assertedly obvious to combine with the substrate of Haseyama et al. to beneficially reduce the number of structural elements of the test tool.

Claims 13 and 17 depend from claim 9. As discussed above, Haseyama et al. fails to describe the claim 9 limitations of: "a one-piece substrate bounded by a first surface and an opposing, second surface and having at least one conductive trace, wherein said first surface is configured for mounting a plurality of IC devices thereto;" "an aperture including a seat portion opening onto said first substantially planar surface of said one-piece substrate and a retaining portion having a first end connected to an opposing end of said seat portion and a second end of a smaller lateral extent than the seat portion extending a depth at least partially into said one-piece substrate therefrom" and "said seat portion of said aperture sized and configured to at least partially contain said contact portion of said spring contact and support the coils of the coil spring during compression thereof, and said retaining portion of said aperture configured to receive and electrically connect said base portion of said spring contact to said at least one conductive trace." Tanaka also fails to teach or suggest these claim 9 limitations.

Accordingly, claims 13 and 17, in depending from claim 9, are allowable over the cited references under the provisions of 35 U.S.C. § 103.

Claim 17 also depends from claim 15, which recites the limitation "a volume of conductive filler material disposed in and filling at least a partial depth of said aperture." Applicant respectfully submits that neither of the cited references teach or suggest this limitation, and that claim 17 is allowable for that reason as well.

Obviousness Rejection Based on U.S. Patent No. 6,229,320 to Haseyama et al. in View of Japanese Patent Publication No. JP 2000-123935 to Kawaguchi.

Claim 23 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Haseyama et al. (U.S. Patent No. 6,229,320) in view of Kawaguchi (Japanese Patent Publication No. JP 2000-123935). Applicant respectfully traverses this rejection, as hereinafter set forth.

Kawaguchi teaches a test socket 1 for electronic parts having contact pins 20 with spiral coil springs 20a having two or more coil turns (see Abstract). The Office indicates it would be obvious to use two or more coil turns for the spring contacts of Haseyama et al. to prevent damage and provide better contact with the solder bumps.

Claims 23 depends from claim 9. As discussed above, Haseyama et al. fails to describe the claim 9 limitations of: "a one-piece substrate bounded by a first surface and an opposing, second surface and having at least one conductive trace, wherein said first surface is configured for mounting a plurality of IC devices thereto;" "an aperture including a seat portion opening onto said first substantially planar surface of said one-piece substrate and a retaining portion having a first end connected to an opposing end of said seat portion and a second end of a smaller lateral extent than the seat portion extending a depth at least partially into said one-piece substrate therefrom" and "said seat portion of said aperture sized and configured to at least partially contain said contact portion of said spring contact and support the coils of the coil spring during compression thereof, and said retaining portion of said aperture configured to receive and electrically connect said base portion of said spring contact to said at least one conductive trace." Kawaguchi also fails to teach or suggest these claim 9 limitations.

Accordingly, claim 23, in depending from claim 9, is allowable over the cited references under the provisions of 35 U.S.C. § 103.

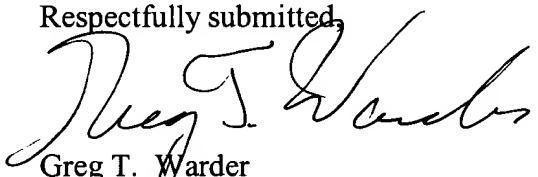
ENTRY OF AMENDMENTS

The amendments to claims 9, 10, 12, 14, 18, 20 and 21 above should be entered by the Examiner because the amendments are supported by the as-filed specification and drawings and do not add any new matter to the application.

CONCLUSION

Claims 9 through 18 and 20 through 23 are believed to be in condition for allowance, and an early notice thereof is respectfully solicited. Furthermore, claims 42 through 45, which are withdrawn as being drawn to a non elected species, depend from claim 9. Applicant considers claim 9 to be generic, and notes that upon allowance of claim 9, any non-elected claims depending therefrom would also be allowable. Should the Examiner determine that additional issues remain which might be resolved by a telephone conference, he is respectfully invited to contact Applicant's undersigned attorney.

Respectfully submitted,



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